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EXAMINER
TRAN, KHANH C

ART UNIT	PAPER NUMBER
2631	

DATE MAILED: 09/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/540,289	AGEHARI, MITSUHIRO	
	Examiner	Art Unit	
	Khanh Tran	2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 June 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 4* is/are rejected.

7)☒ Claim(s) *3* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 March 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *11* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. The Amendment filed on 06/27/2003 has been entered. Claims 1-4 are pending in this Office action.

Response to Arguments

2. Applicant's arguments, see page 7 of the Amendment, filed on 06/27/2003, with respect to the drawings have been fully considered and are persuasive. Therefore, the objection has been withdrawn.

3. Applicant's arguments based on *amended claims 1, 2, and 4*, see pages 9-10 of the Amendment, filed on 06/27/2003, with respect to the rejection(s)of claim(s) 1, 2, and 4 under 35 U.S.C. 102 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made over Wolcott U.S. Patent 6,370,202 B1 in view of Rhodes et al. U.S. Patent 5,420,887 to address newly added limitations in claims 1, 2, and 4.

Regarding claim 1, Applicant's arguments based on amended claims on pages 9-10 of the Amendment that Wolcott does not teach or suggest of the modulation operation mode being input as recited in the claimed application. However, after carefully reviewed Wolcott invention, Wolcott indeed mentions a programmable transmit module in the background of invention. Wolcott teachings are designed to automate the selection of a multitude of modulation formats. However, it would have been obvious for one of ordinary skill in the art that Wolcott teachings could be modified to have an user

input interface for inputting various parameters since most of the functionalities of Wolcott teachings still performs the same way, but in manual mode instead. The programmable modulator as taught by Rhodes et al. in an U.S. Patent 5,420,887 shows those limitations, therefore, a new ground of rejection due to new amendment is introduced using combination of both teachings shown below.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wolcott U.S. Patent 6,370,202 B1 in view of Rhodes et al. U.S. Patent 5,420,887.

Regarding claim 1, as recited in previous Office action and repeated again, Wolcott invention is directed to a self-selective multi-rate transmitter that processes variable input rate data using a plurality of single input, multiple output inter-leavers. Figure 1 illustrates an embodiment of a self-selective multi-rate transmitter comprising two single-input, multiple-output (SIMO) inter-leaver 11 that accepts input data at an input rate of R_d bits per second and an input clock from outside. Hence, the SIMO inter-leaver 11 performs similar functions as data processing means in the claim. The modulation section comprises a forward error correction circuit 12, a vector modulator

13, and an up-converter 14. The forward error correction circuit 12 receives n parallel output from the SIMO inter-leaver 11 and implement a coding scheme in such a way to produce n parallel channels of coded data. Hence, the forward error correction circuit 12 performs similar functions as coding means in the claim. Figure 13 illustrates a forward error correction circuit as discussed above. The combination of the vector modulator 13 and the up-converter 14, represents transmission means as in the claim. However, Wolcott does not teach the use of an input modulation operation mode as argued in Applicant's Amendment. As discusses in the *Response for Arguments* above, Rhodes et al. discloses in an US Patent 5,420,887 a programmable digital modulator and methods of modulating digital data for transmission according to operating parameters selected for various applications. Figure 5 illustrates a memory device 90 and a modulator chip 100. The programmable modulator chip 100 includes a data interface 100 for accepting a plurality of data inputs, a clock generator 109 for receiving an input master clock, a parameter interface for accepting user input, for instance, including the modulation constellation, the number of bits per symbol, the carrier frequency, and the number of bits per symbol. Hence, the parameter interface accepts user input modulation mode as claimed in the instant application. The programmable modulator chip 100 also comprises a modulator 120 for generating modulated output samples at the user defined output sample rate. The programmable modulator chip 100 further includes a data scrambler 104 and a differential encoder 106, wherein both the data scrambler 104 and the differential encoder 106 provide the coding means for processing the plurality of input data. From the foregoing discussion, it should be evident that

Rhodes et al. programmable digital modulator has similar structure as Wolcott teachings, with the addition of a user input interface. For the reasons stated in the *Response to Arguments*, it would have been obvious for one of ordinary skill in the art that Wolcott teachings could be modified to have an user input interface for inputting various parameters since most of the functionalities of Wolcott teachings still performs the same way, but in manual mode instead.

Regarding claim 2, figure 2 shows a plurality of parallel registers of L bits in the SIMO inter-leaver 11 for storing input data and parallel outputs of the SIMO inter-leaver 11 are clocked at a fixed rate, R_u, as uncoded k-bit symbols. Obviously, a memory buffer is required at the input for buffering the incoming data, the memory buffer corresponds to the transmission memory as claimed. On the output side, the uncoded k-bit symbols must be buffered before inputting to the forward error correction circuit 12. Hence, the output buffer corresponds to the memory for temporarily storing as claimed in the instant application. Furthermore, also well known and described in Wolcott invention, a transmitter always performs data formatting, forward error correction encoding, and modulation. The formatting process includes partition of the data into multiple blocks for transmission over channel, and/or adding error detection coding. Even though it's not clearly stated in both Rhodes et al. and Wolcott inventions, however, it would have been obvious to one of ordinary skill in the art the formatting process as taught by Wolcott performs data conversion similar to the claimed step of

"assembling" the data of m-bit strings into data of n-bit strings to be used for coding process.

Regarding claim 4, referring to figure 5 of Rhodes et al. invention, a clock generator 109 generating a timing clock for the modulator 120 performs similar function of claimed transmission control circuit. The modulator 120 for modulating and transmitting the data according to the timing clock represents a combination of claimed modulation allocation circuit and claimed transmission circuit.

Allowable Subject Matter

5. Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. The prior art made of record and not relied upon could be considered pertinent to applicant's disclosure:

Needham et al. U.S. Patent 5,764,699 discloses "Method and Apparatus for Providing Adaptive Modulation in a Radio Communication System".

Kao U.S. Patent 4,937,844 discloses "Modem with Data Compression Selected Constellation".

Strolle et a. U.S. Patent 6,169,767 B1 discloses "Universal Network Interface Module".

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh Tran whose telephone number is 703-305-2384. The examiner can normally be reached on Tuesday - Friday from 08:00 AM - 05:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 703-306-3034. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3800.

KCT

M. Gh-

MOHAMMAD H. GHAYOUR
PRIMARY EXAMINER